REMARKS

Claims 1-22 are pending in this application. By this Amendment, claims 1, 16, 17, 20 21 and 22 are amended. Reconsideration of the present application is respectfully requested.

I. The Claims Satisfy the Requirements of 35 U.S.C. § 112, First Paragraph

The Office Action rejects claim 22 under 35 U.S.C. § 112, first paragraph. Specifically, the Office Action asserts that the disclosure does not provide support for the feature of the electrode or the distance between the electrodes. Support for the feature of the distance between the electrodes being less than 5mm can be found at least at page 4, lines 6-8 of the specification. Thus, this feature is fully supported by the original disclosure. Withdrawal of the rejection under 35 U.S.C. § 112, first paragraph is respectfully requested.

II. The Claims Define Patentable Subject Matter

The Office Action rejects claims 1-21 under 35 U.S.C. §102(e) over U.S. Patent Publication No. US 2002/0119327 A1 to Arkles et al. ("Arkles"), and claim 22 under 35 U.S.C. §103(a) over Arkles. The rejections are respectfully traversed.

Arkles does not disclose or suggest a method for fabricating a film in which, the noble gas plasma is produced and that noble gas radicals and ions subsequently collide with the reactant gas to form reactant gas radicals and ions to form a plasma of the reactant gas, as recited in claims 1, 16, 20 and 21 or the noble gas radicals and ions collide with the reactant gas to form plasma, as recited in claim 17.

Instead, Arkles is drawn specifically to an atmospheric pressure chemical vapor deposition (APCVD) process. See, for example, page 6, paragraph 48 of Arkles. The noble gases used in the process of Arkles are used merely to dilute the precursor, and are not used to form plasma. In contrast, the present invention is directed to a plasma enhanced chemical vapor deposition process (PECVD) that does not require the use of expensive vacuum tools.

Accordingly, withdrawal of the rejections under 35 U.S.C. §§ 102 and 103 is respectfully requested.

As pointed out in MPEP §2131, "[t]o anticipate a claim, the reference must teach every element of the claim." Thus, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros v. Union Oil Co. of California*, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987)." Similarly, MPEP §2143.03 instructs that "[t]o establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 409 F.2d 981, 180 USPQ 580 (CCPA 1974)."

For at least these reasons, it is respectfully submitted that independent claims 1, 16, 17, 20 and 21 are patentable over the applied references. The remainder of the claims that depend from independent claims 1 and 17 are likewise patentable over the applied references for at least the reasons discussed above, as well as for the additional features they recite.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-22 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned representative at the telephone number set forth below.

Respectfully submitted,

James A. Oliff
Registration No. 27,075

Jeffrey M. Lillywhite
Registration No. 53,220

JAO:JML/can

Date: July 31, 2003

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

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Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for fabricating a film, ~~the method~~ comprising:

introducing a gas mixture of a noble gas and reactant gas into a chamber; and

supplying an electrical energy to a gas mixture ~~of~~ such that a noble gas ~~and reactant gas at a total pressure of 90 kPa to 110 kPa to create reactive species, the reactive species forming a film on a substrate, the electrical energy being used for producing~~ plasma is produced and that noble gas radicals and ~~ions, the noble~~ ions subsequently collide with the reactant gas to form reactant gas radicals and ions ~~colliding with the reactant gas~~ to form ~~the reactive species~~ a plasma of the reactant gas, which enable the plasma to be formed under a pressure of 90 kPa to 110 kPa,

the reactant gas radicals and ions reacting to form the film.

2. (Original) The method of claim 1, said energy being supplied to the gas mixture by electric power in a frequency range of 1 kHz to 100 MHz.

3. (Original) The method of claim 1, one of helium, argon, neon krypton, xenon or one of a mixture of at least two chosen from a group consisting of helium, argon neon, krypton and xenon being used as noble gas.

4. (Original) The method of claim 1, temperature of the substrate on which said film is to be formed being in a range of 25 to 500°C.

5. (Original) The method of claim 1, the film being silicon dioxide or having a composition close to silicon dioxide.

6. (Original) The method of claim 1, the film being silicon nitride or having a composition close to silicon nitride.

7. (Original) The method of claim 1, the film being one of a silicon film, a doped silicon film, and a hydrogenated-silicon film.

8. (Original) The method of claim 1, the film being one of a metal and an alloy film.

9. (Original) A semiconductor device comprising a film fabricated according to the method of claim 1.

10. (Original) The semiconductor device of claim 9, the semiconductor device being one of a metal oxide semiconductor field effect transistor device, a thin film transistor, and a silicon on insulator device.

11. (Original) The semiconductor device of claim 9, the semiconductor device being a photovoltaic device.

12. (Original) An electro-optical apparatus comprising the semiconductor device of claim 9.

13. (Original) A memory device comprising a film fabricated according to the method of claim 1.

14. (Original) The memory device of claim 13, the memory device being one of a metal oxide semiconductor field effect transistor device, a thin film transistor, and a silicon on insulator device.

15. (Original) The memory device of claim 13, the memory device being a photovoltaic device.

16. (Currently Amended) A method for fabricating a film, ~~the method~~ comprising:

introducing a gas mixture of a noble gas and reactant gas into a chamber; and

supplying an electrical energy to a gas mixture ~~of~~ such that a noble gas ~~and reactant gas at a total pressure of 1 kPa to 110 kPa to create reactive species, the reactive~~

~~species forming a film on a substrate, the electrical energy being used for producing~~plasma is produced and that noble gas radicals and ~~ions, the noble~~ions subsequently collide with the reactant gas to form reactant gas radicals and ions ~~colliding with the reactant gas~~ to form ~~the reactive species~~a plasma of the reactant gas, which enable the plasma to be formed under a pressure of 1 kPa to 110 kPa,

the reactant gas radicals and ions reacting to form the film.

17. (Currently Amended) A method for fabricating a film, the method comprising:

supplying optical energy with a light of wavelength less than 200 nanometer to a mixture of noble gas and reactant gas to create reactive species, the reactive species forming a film on a substrate, the ~~electrical~~ optical energy being used for producing noble gas radicals and ions, the noble gas radicals and ions colliding with the reactant gas to form ~~the reactive species~~plasma.

18. (Original) A semiconductor device comprising a film fabricated according to the method of claim 17.

19. (Original) A memory device comprising a film fabricated according to the method of claim 17.

20. (Currently Amended) A method for fabricating a semiconductor device, ~~the method~~ comprising:

a step of forming a film by:

introducing a gas mixture of a noble gas and reactant gas into a chamber; and

supplying an electrical energy to a gas mixture ~~of~~ such that a noble gas ~~and reactant gas at a total pressure of 90 kPa to 110 kPa to create reactive species, the reactive species forming a film on a substrate, the electrical energy being used for producing~~plasma is produced and that noble gas radicals and ~~ions, the noble~~ions subsequently collide with the

reactant gas to form reactant gas radicals and ions ~~colliding with the reactant gas~~ to form ~~the reactive species~~a plasma of the reactant gas, which enable the plasma to be formed under a pressure of 90 kPa to 110 kPa,

the reactant gas radicals and ions reacting to form the film.

21. (Currently Amended) A method for fabricating a memory device, ~~the method~~ comprising:

a step of forming a film by:

introducing a gas mixture of a noble gas and reactant gas into a chamber; and

supplying an electrical energy to a gas mixture ~~of~~ such that a noble gas ~~and reactant gas at a total pressure of 90 kPa to 110 kPa to create reactive species, the reactive species forming a film on a substrate, the electrical energy being used for producing~~plasma is produced and that noble gas radicals and ~~ions, the noble~~ions subsequently collide with the reactant gas to form reactant gas radicals and ions ~~colliding with the reactant gas~~ to form ~~the reactive species~~a plasma of the reactant gas, which enable the plasma to be formed under a pressure of 90 kPa to 110 kPa,

the reactant gas radicals and ions reacting to form the film.

22. (Currently Amended) A method for fabricating a film according to claim 2, the electric power being applied ~~through~~ between electrodes, the distance between the electrodes being less than 5mm.